III

OCR

INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

S-E-C-R-E-T

50X1-HUM

COUNTRY	Rumania	REPOR	
SUBJECT	Sodium Products Plant No. 1 at Ocna Muresului (production, processing, transportation facilities including [illegible])	DATE DISTR.	3 May 1961
		NO. PAGES	4
		REFERENCES	RD
DATE OF INFO.			50X1-HUM
PLACE & DATE ACQ.			50X1-HUM

THIS IS UNEVALUATED INFORMATION. SOURCE GRADINGS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

1. Sodium Products Plant No. 1 occupies the premises of the former Solvay plant in Ocna Muresului and is subordinate to the Rumanian Ministry for the Petroleum and Chemical Industries. It was greatly expanded and developed between 1955 and 1960 by the addition of new buildings and the installation of East German equipment. Whereas the total production in 1948 was 50,000 tons, the plant is to produce about 240,000 tons of calcined soda and 60,000 tons of caustic soda in 1961.

2. At the end of 1960, the plant employed about 800 permanent employees, of whom some 38 were engineers, and about 3,000 temporary workers occupied in work connected with the plant's expansion. According to the plans, the plant will finally employ a maximum of 1,000 permanent workers. It now works three shifts every day of the year, Sundays and holidays included.

3. The plant has the following production departments:

   a. Lime kilns department

   b. Slaking vats

   c. Compressors department.

   d. Refining by absorption department (Distilare Absorbere)

   e. Department for refining brine solution by decantation (Distilare Saramura Decantata)

   f. Rotary filters department

ACIC

5 4 3 2 1

S-E-C-R-E-T

50X1-HUM

STATE	X	ARMY	X	NAVY	X	AIR	X	NSA	X	OCR

(Note: Washington distribution indicated by "X"; Field distribution by "#".)

INFORMATION REPORT INFORMATION REPORT

g. Rotary calcinators department

h. Caustic soda department (also used for calcined soda production)

i. Evaporation department

j. Concentration department

k. Pumps department

l. Refrigeration department.

4. Both calcined soda and caustic soda are produced by the Solvay method. The procedures for the production of each are as follows:

a. Calcined soda: The raw material, dolomite from the Turda quarries, is placed in lime kilns. The kilns burn coke; experiments in replacing the coke with methane gas have not yet succeeded. From the kilns the lime passes into the slaking vats and becomes milk of lime. The carbon dioxide given off in the kilns passes into the compressors department where it is put under pressures gradually raised to 13 atmospheres. The residue from the dolomite goes to the department for refining brine solution by decantation. The milk of lime is refined by absorption and mixed with brine solution in the department. Ammonia is then added in preparation for producing sodium bicarbonate. The liquid is then charged with carbon from the compressors department, and unrefined sodium bicarbonate is obtained. The water from the unrefined product is removed in rotary filters run by vacuum pumps, and the sodium bicarbonate which remains is channeled through troughs onto conveyor belts which carry it to rotary calcinators to be heated and dried at 850 to 1,000°C. The produce obtained after calcination is sodium carbonate. The sodium carbonate is pumped by Fuller pumps to elevators to be gradually cooled, and is then weighed automatically into sacks. The sacks whose contents are of a quality suitable for export are transferred to a special export warehouse: the others are for the home market. The soda is exported to China North Korea, and, in small quantities, to East 50X1-HUM
Germany.

50X1-HUM

b. Caustic soda: The milk of lime passes from the vats to the"decarbonatoare" and then to the decantation section of the caustic soda production department where the residue is removed. The clear lime solution continues on to the evaporation department to be dried by superheating. The soda is taken to the concentration department, transformed into a 200-percent solution, and automatically weighed into metal barrels, which are taken by conveyors to the caustic soda warehouse.

5. The plant is surrounded by a concrete wall about 2.5 meters high, in which there are four gates: Gate No. 1 is used by the plant's directorate and engineers and by visitors, No. 2 by the MONCHIM workers who are employed in enlarging the plant, No. 3 by the trains, and No. 4 by the workers, clerks and technicians of the plant. The old buildings are made of brick with tiled walls; the new ones are also of brick but on metal construction.

6. The plant's thermal power station produces 22 megawatts, but since the plant requires only 6.5 megawatts, the surplus is automatically transferred to the nearby provincial power station at Ocna Muresului. The plant's station produces high tension current at 35 and 6 kilovolts, which two transformers step-down to alternating current at 380 volts for the equipment, and 220 volts for illumination. Its equipment includes:

a. Three Babcock-Wilcox-type steam boilers of 45 tons, each produced by the Lang-Ganz plant in Hungary.

b. One 45-ton Babcock-Wilcox-type steam boiler produced at the Mao Tse Tung plant in Bucharest.

c. One 40 cubic meter [redacted] boiler. 50X1-HUM

d. One 11-megawatt turbine with counter pressure of 13 atmospheres, produced by the Lang-Ganz plant.

e. One Brown-Bovery turbine, possibly driven by the [redacted] boiler. 50X1-HUM

f. Two 4.5 megawatt Resita boilers, now being installed.

7. Other structures at the plant are the following:

a. A single-story building, about 25 by 10 meters in size, containing a large laboratory for chemical analysis and a laboratory for research into sodium and chlorine compounds.

b. A single-story building, about 40 by 10 meters in size, housing the maintenance workshops for electrical and mechanical repairs and the carpentry shop. Among the machinery are 14 or 15 lathes produced at the Iosif Ranghet plant in Arad.

c. An old pumping station for pumping water from the Mures River.

d. The department for refining brine solution is in a 15 by 12 meter building containing six 1,500 cubic meter tanks. The solution is piped into the department in pressurized pipes, some above ground and others underground, made of steel and of F-250 and F-350 cast iron.

e. A decanting tank for the water for the power station, with a capacity of 1,200 cubic meters.

f. A pumping station for the above tanks.

g. A water tower and the tower's pumping station.

h. The director's home, a small, single-story building.

i. A pumping station for the 24 refrigeration columns. About 4,500 cubic meters of water passes through each column per hour.

j. A building containing five large pumps which pump 1,500 cubic meters per hour from the Mures River into the decanting tanks by means of pressure pumps at four atmospheres pressure. Only three or four pumps work simultaneously.

k. The funicular railroad stations and the railroad stores.

l. Six lime kilns, each with a production capacity of 200 cubic meters per day.

m. Decenting tanks.

n. Slaking vats.

o. Towers for the purification of carbon dioxide. They are now in disuse having been replaced by venturi pipes shaped thusly: 

p. Department for exploiting the dolomite and coke ashes remaining in the kilns.

q. Compressors department containing four very large compressors: two are products of Ganz-Lang, one of Skoda, and one of Andritz.

r. Columns for the refining of ammonia by absorption.

s. 18 columns for producing carbonates: each column is 27 meters high, 1.8 meters in diameter, and has an output of 40 tons (as against 20 tons under the original management). The columns are protected against corrosion by a new system of galvanization using policlorula de vinil.

t. A building containing 8 rotary filters and vacuum pumps.

u. A building containing 8 rotary calcinators (only six are operational), each with a capacity of 150-180 tons of lime a day.

v. Warehouse for soda destined for export.

w. Warehouse for soda, approximately 20 meters square and 40 meters high.

x. Two-story office building, 25 by 8 meters in size.

y. Department for the production of refined sodium bicarbonate, sodium carbonate crystals, and sodium silicate (Wasserglas).

z. The old boiler department, now used as a maintenance shop for the above department for the production of sodium bicarbonate, etc.

aa. Department for the production of silica gel through the use of volfatita (sic).

bb. Various workshops (cooperage, maintenance, etc.), and stores.

cc. Workers quarters.

50X1-HUM

8. [redacted] large sketch of Sodium Products Plant No. 1 at Ocna Muresului with a legend showing the layout of the installation.

[redacted]

50X1-HUM

Legend

1. To Ocna Muresului.

2. Salt mines, exploited to a depth of 150 meters.

3. Salt mines, exploited by surface dissolution.

50X1-HUM

50X1-HUM

4. Tobacco factory.

5. Offices of the Ocna Muresului salt mines.

6. Vioara railroad station.

7. Workers' quarters of Sodium Products Plant No. 1.

7a. Restaurant.

7b. Technical department and library.

8. Gate No. 4 (for workers, technicians and clerks).

9. Chimney.

10. Caustic soda warehouse.

11. Concentration department.

12. Shop producing metal barrels.

13. Evaporation department.

14. Decantation department.

15. Silica gel department.

16. Administrative personnel's housing.

Nos. 17 to 24 - Power station of the plant

17. Six-kilowatt transformer unit.

18. Control room.

18a. 4.5-megawatt Resita boiler.

19. 11-megawatt Ganz-Lang turbine.

20. 40-cubic-meter Velox boiler.

21. 4.5-megawatt Resita boiler.

22. Three Ganz-Lang boilers and one boiler from the Mao Tse Tung (Bucharest) Plant.

SECRET

ACIC

50X1-HUM

23. Pumping station. 50X1-HUM

24. Water preparation installations.

24a. Stores.

25. Old boiler room, now a workshop.

26. Chimney, approximately 45 meters high.

27. Gate No. 3 (for trains).

28. Gate No. 2 (for Monchim employees).

29. Chimney.

30. Department for the production of sodium bicarbonate and sodium silicate refined from soda crystals (soda cristalizata).

31. Gate No. 1 (for the management, engineers, and guests).

32. Offices.

33. Raw materials stores.

34. Workers quarters.

35. Workers quarters.

36. Eight rotary calcinators.

37. Eight rotary filters.

38. 18 columns for the production of carbonates.

39. Department for the refining of ammonia by absorption.

40. Compressors department.

41. Slaking vats.

42. Electrically-powered moist filters.

43. Carbon dioxide purification towers (no longer used)

44. Venturi pipes for purifying carbon dioxide.

50X1-HUM

45. Ventilation equipment for the kilns.

46. Lime kilns.

47. Decantation tanks.

48. Station No. 19 of the funicular railroad.

Nos. 49-52 - High-pressure pumping station for supplying water for the refrigeration columns.

49. Water decantation tanks.

50. Chamber for 4- and 6-kilovolt pumpingunits (uncertain).

51. Magnesium oxide chamber (uncertain).

52. Five pumps.

53. Coke bins.

54. Limestone bins.

55. Pumping station and three tanks of water.

56. Ocna Muresului provincial power station.

57. Pumping station "A".

58. Pumping station "A".

59. Mures River.

60. To Raboieni

61. Station No. 17 of funicular railroad.

62. Station No. 18 of funicular railroad.

63. Director's home

64. Tower for potable water.

65. Pumps for supplying water to the decantation water.

66. Decantation tanks.

67. Department for refining brine solution.

68. Pumping station.

69. Maintenance workshops.

70. Laboratories.